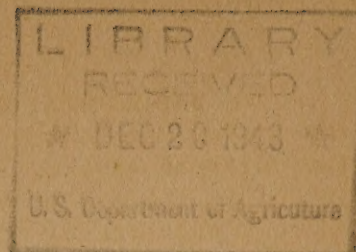


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United States Department of Agriculture
EXTENSION SERVICE
Washington 25, D. C.



WORK SIMPLIFICATION IN THE HOME 1/

INTRODUCTION

An example of work simplification in the home was given by Elaine Knowles, instructor in home management and household economics, Cornell University, at a recent outlook conference in Washington. At this conference Miss Knowles showed a moving picture of the original and improved methods of ironing a man's shirt. The improved method was an outgrowth of a research fatigue study. In the old method, the homemaker picked up and replaced the iron 72 times. The iron weighed 6 pounds, so that she lifted and carried 432 pounds. In addition, she made 22 major shifts and turns of the shirt while ironing it and twisted her body in order to do all the ironing with her right hand. In the new method the ironing board was widened to 20 inches, thus facilitating better and faster work. The iron was picked up and replaced 26 times, the carrying weight being only 156 pounds. Only four major turns and moves of the shirt were made and the homemaker learned to use her left hand.

WORK SIMPLIFICATION DEFINED

Work simplification is defined by Dr. M. E. Mundel, industrial engineer, Purdue University, as "A scientific systematic analysis of ways of doing work in order to --

1. Eliminate all unnecessary work.
2. Provide the best sequence for the necessary work.
3. Provide the best conditions for the performance of necessary work.
4. Standardize the method and the time in performing work.
5. Apply these standards.

The techniques which work simplification has evolved are applicable on the farm, in the home, in the factory, the hospital, the office - wherever human effort is involved."

Another definition using extension workers' terminology has been adapted from a Vermont bulletin: "To train homemakers in methods and techniques of improved utilization of their time and labor, to the end that the present levels of good housekeeping and homemaking can be maintained, and, in addition, a greater amount of food produced." 2/

1/ Presented to the Home Economics Section, Land-Grant College Association, Chicago, Ill., October 28, 1943, by Mary Rokahr, extension economist, home management.

2/ Taken from Bulletin 7-6, 1943 Series, Making Milk With Less Labor, by State Board for Vocational Education in cooperation with the University of Vermont and the Agricultural College, Burlington.

TWO TECHNIQUES REVIEWED

Two techniques, that have come to the fore in 1943, to help home economists and homemakers become work simplification conscious are worth reviewing. Through the interest of Mrs. Lillian Gilbreth (engineering consultant, Purdue University) in helping home economists adapt engineering time and motion principles to home-making, the General Education Board, A. R. Mann, Director, made a special appropriation to bring 30 home economists to Purdue for a 2-week course on this subject. The home economists represented teaching, research, and extension staffs. The course, given by Dr. Mundel, covered process charting, operation charting, micromotion study, stop-watch study, and principles of motion economy. Laboratory techniques and field trips aided home economists in applying these principles to their homemaking interests.

Industry uses 24 time and motion analysis principles. Home economists in their preliminary adaptation of these principles are focusing attention on the following:

- Can this operation be eliminated? What would happen if I did not do it?
- Can I substitute a better way?
- Can I use my equipment to better advantage?
- Is my equipment in good order?
- Can the order of work be changed so as to allow more work with less physical effort?
- Can I ease a job? Reduce the time needed to do it?
- Am I overexerting myself by stooping? By lifting the hard way?
- Can excess travel be eliminated by -
 - a) Planning work?
 - b) Changing the places where things are kept?
 - c) Combining the jobs?

When I do something repetitive can I -

- a) Sit comfortably?
- b) Let gravity help?
- c) Have both hands work instead of one?
- d) Make the job safer?
- e) Use a better tool?
- f) Arrange my work so that everything is within elbow reach?
- g) Use all the help I can get?

What is the best time to do a job?

Do I train helpers in the best way to do a job? To use a tool?

The second technique, called "J.M.T." - job methods training, developed by Training Within Industry, War Production Board, is based on the time and motion study principles developed by industry. As Stuart Chase describes it in the November issue of Reader's Digest, "Job Methods Training, or JMT, is a kind of midget course in scientific management, humanized."

Demonstrations on the original and improved methods of assembling a radio shield are first given and then the persons interested in improving their work are taught the principles involved by a four-step method. As Stuart Chase describes it:

"The first step is to break down the job, listing on paper all the details. The second step is to query every one of these details with a machine-gun burst of questions: Why is this necessary? What is its purpose? Where should it be done? When should it be done? Who is best qualified to do it? How is the best way to do it?

The third step is to develop the new method. Take the job breakdown and eliminate unnecessary details, combine, rearrange, simplify.

The fourth and last step is to sell the idea to all the workers who are going to use it, and to the man higher up."

I have been using the method with State home-management specialists and can recommend it as a successful device to help home economists improve their own jobs. How well it can be used to help homemakers I do not know, but I would have no hesitation in urging home economists to explore its use with homemakers.

Another course given by Training Within Industry to improve jobs is the "J.I.T." - job instruction training. The slogan, "If the learner has not learned the teacher has not taught," gives the clue to the purpose of this work. A third course, "J.R.T." - job relation training, may also be of interest to home economists. These courses have been described in Reader's Digest as follows: September, pages 17-21; October, pages 79-82; and November, pages 108-112.

HOW SHALL WE PROCEED?

How should home economists proceed in helping others to become work-simplification conscious, if we are convinced that such subject matter should be emphasized in future programs? Here are some of my ideas:

1. Further research work on the application of time and motion study to home situations is needed. Cornell, Oregon, Vermont, Indiana and other State colleges already have research studies under way. The Purdue Conference listed areas in which research is needed. 3/ More funds are needed for such studies and after the studies are made, the findings should have wide circulation among home economists and homemakers.
2. Refresher courses are needed, first for home economists and later for local leaders. Purdue is the logical place for this work to continue, and other conferences similar to the one held last August can be developed if home economists are interested.

Some home economics colleges are in a position to offer training to special groups. The times may call for regional conferences developed on a national basis through the Extension Service, Office of Education, and other governmental agencies having field staffs. As work progresses, how to develop the program will become clearer.

3/ See pages 6 to 10 in the Farm Work Simplification News Letter, Issue No. 4, September 1943, Purdue University, LaFayette, Ind.

The teaching staff members who attended the Purdue Conference suggested problems of teaching motion and time study at the college level, as-

- a) Report of present course offerings.
- b) Place of motion and time study in home-management houses.
- c) Training all home economics students versus teaching special groups.
- d) Responsibilities of all subject-matter teachers to teach work simplification as a part of class teaching, e.g., foods, clothing, housing.
- e) Need of training workers for research in work simplification.
- f) Refresher courses and possible new courses.

3. To date the Extension Service has fostered the following activities in the development of this program through the State home management staffs:

- a) Thirteen extension specialists attended the Purdue Conference and are now incorporating work simplification ideas into their State programs.
- b) A day at the Outlook Conference, October 1943, was devoted to reports, discussion, and the showing of films on work simplification. Forty-three home economists from 30 States attended.
- c) Thirty four home economists took the J.M.T. course and are using this method to improve their jobs and adapting the techniques to work with rural women.
- d) Slidefilms No. 638, Finding Minutes, and No. 643, Step by Step in Everyday Housework, have been made available to State extension services. (See directions for ordering on p.6)

4. We need the help of home economists in business or we shall never be able to get 20-inch wide ironing boards and work-simplification designed household equipment in the post-war years. Heads of home economics departments can aid greatly by taking the initiative in inviting this group to join us in becoming work-simplification minded.

5. Home economists working with farm people also know what programs in work simplification for the home will have wider acceptance if they parallel work by farm-management specialists in farm work simplification. We are trying to reach the entire farm family with ways of simplifying farm and home work to produce more food.

CONCLUSIONS

A review of the subject-matter knowledges and the techniques of teaching work simplification or time and motion principles has led me to these conclusions:

Home economists and homemakers alike, in order to aid in the war effort, are interested and anxious to improve the ways in which they do their work. This approach, therefore, is timely and has an unusual appeal. No other field of

endeavor seems to offer such fruitful returns in reaching the goal of greater production. There is no limit to the possibilities of improving jobs.

The subject-matter is not all new to home economists, but it has been put into an organized form with emphasis on "principles" instead of "practices." Refresher courses in work simplification or time and motion studies are needed now.

There is danger in having work simplification activities become an end in themselves instead of only a means to an end for more and better work accomplished. Therefore, these activities should not be separated from the teaching programs in clothing, food and nutrition, parent education, and other subject-matter fields.

From an Extension Service point of view, I think we are seeing clearly in work simplification techniques an opportunity to teach people how to use principles to solve their own problems rather than to confine ourselves to the teaching of better practices. The teaching of practices and of principles both have their place, but in time of war we need to stimulate people to develop their own better ways of doing their work.

Any activities must or may be carried on during war years. Everyone of us must make certain decisions alone, but regarding work simplification in the home, the combined judgement of the heads of home-economics departments should either further the program in 1944 or put it aside in the firm belief that other methods will give greater aid to winning the war.

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To Do It Easier and Do It Better. J.M.T., Stuart Chase. Reader's Digest, vol. 43, No. 259, pp. 108-112, November 1943.

Show-How. A Revolution in Management, J.I.T., Stuart Chase, Reader's Digest, vol.43, No. 258, pp. 79-82. October 1943.

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Streamlining Housework in Wartime. A selected list of references on time management, Mary Rokahr, U. S. Dept. Agr., Ext. Serv. Cir. 407., 15 pp., Washington 25, D. C. 1943.

Women's Work Made Easier, Mary Louise Collings. Jour. Home Econ., vol. 35, No. 10. December 1943.

SLIDEFILMS 4/

No. 638 - Finding Minutes. Lecture notes for this slidefilm were prepared by Mary Rokahr and Mary W. Armstrong. 43 frames; single, \$0.50; double, \$1. Order from Photo Lab. Inc., 3825 Georgia Avenue, NW., Washington 25, D. C.

No. 643 - Step by Step in Everyday Housework. Lecture notes for this slidefilm were prepared by Esther Pond, home-management specialist, Pullman, Wash. 60 frames; single, \$0.55; double, \$1.25.

When 10 or more copies of any one slidefilm are ordered, slightly lower prices are charged.

4/ For further information regarding slidefilms write to the Extension Service, United States Department of Agriculture, Washington 25, D. C.